

**GUAM EPA
TITLE V FEDERAL OPERATING PERMIT
STATEMENT OF BASIS**

Pruvient Energy Guam Inc. – Tanguisson Power Plant

Permit No. FO-012

Facility ID:	FO-012
Facility Name:	Tanguisson Power Plant
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I. Purpose

The purpose of this engineering evaluation is to identify all applicable requirements, determine if the facility will comply with those applicable requirements, and provide the legal and factual basis for proposed permit conditions.

II. Facility Location

Tanguisson Power Plant is located at Dededo Village, Parcel 1, Estate 103 in Dededo, Guam.

III. Description of Facility Operations

The facility is a power plant that generates electricity by burning No. 6 fuel oil combustion in two 26.5 megawatt (MW) steam electric generating boiler units.

Activities that have the potential to cause significant emissions of air pollutants include burning of fossil fuel and evaporation from fuel storage tanks.

IV. Equipment Listing and Permitting History

IV.A. Significant Emission Units

A listing of all permitted units, as well as any associated control equipment, at the facility is presented in the table shown below. This table also includes the Guam EPA (GEPA) permit number for those emission units with existing permits. The conditions from these permits have been incorporated into the Title V permit, which supercedes the existing GEPA permits.

Emission Unit Number	Unit Description	Associated Control Equipment	Guam EPA Permit Number
Unit 1	26.5 MW fuel oil-fired boiler	N/A	HEI-678
Unit 2	26.5 MW fuel oil-fired boiler	N/A	HEI-678
ICE 1	350 kilowatt (kW) diesel emergency generator	N/A	N/A
Tank 1	10,000 barrel (bbl) No. 6 fuel oil storage tank	N/A	N/A
Tank 2	10,000 bbl No. 6 fuel oil storage tank	N/A	N/A

GEPA Permit HEI-678 issued on August 25, 1997 authorized a modification to the Tanguisson facility. This permit contained requirements designed to limit emissions from this modification to levels below those that would trigger the Prevention of Significant Deterioration (PSD) program. Two special conditions were added to this permit, as follows:

“V. Special Conditions

- A. As a requirement of the USEPA PSD exemption letter dated May 5, 1997, and the PSD Regulation 40 CFR 52.21 (b)(21)(v), HEI Power Corporation Guam must submit to USEPA and Guam EPA information demonstrating that the renovation of the Tanguisson Power Plant did not result in a significant emissions increase. This information must be submitted to USEPA and Guam EPA on an annual basis for a period of not less than five (5) years from the date the facility resumes regular operation.

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Therefore, HEI Power Corporation Guam must notify the Administrator of Guam EPA in writing, and a copy to USEPA, of the actual date that the facility resumes regular operation. Notification must be submitted to Guam EPA within fifteen (15) days after such date.

- B. HEI Power Corporation Guam must submit a plan to demonstrate or reach attainment of the National Ambient Air Quality Standards (NAAQS) for Sulfur Dioxide within the 3.5 kilometer are around the Tanguisson Power Plant Facility with one year from the date of this permit issuance.”

Based on information provided by the applicant, Guam EPA has determined that Condition V.A has been satisfied. This information indicated that the renovation of the Tanguisson Power Plant did not result in a significant emissions increase and did not trigger the PSD program. The permittee has also submitted the plan required by Condition V.B from GEPA Permit HEI-678 (Attainment Demonstration Plan), but is still in the process of implementing the plan.

As a result, the commitments of the Attainment Demonstration Plan have been added to Section II.G, Special Conditions, of the Title V Permit to require the facility to fully implement the plan. The Special Conditions contain interim milestones that must be achieved, and require that the permittee must submit Progress Reports to Guam EPA on a monthly basis to demonstrate ongoing progress toward achieving full plan implementation. A requirement has also been added to the permit requesting that the permittee update the Attainment Demonstration Plan to include any additional requirements determined to be required by Guam EPA or USEPA.

IV.B. Insignificant Emission Units

The following list of insignificant activities provided by the applicant in the permit application for this facility has been approved by GEPA. This equipment is not exempt from facility-wide requirements.

Description of Activities or Emission Units
2 welding units
Oil/water coalescer
Oil/water separator
Forklift
Parts cleaner/degreaser
Diesel oil storage tank

V. Potential to Emit

The annual potential to emit for each significant emission unit is presented below.

Emission Unit	Potential to Emit (tons/year)						
	NO _x	VOC	SO ₂	PM ₁₀	CO	Lead	HAP
Unit 1	963.6	7	2,927	196	120.8	0.103	1.31
Unit 2	963.6	7	2,927	196	120.8	0.103	1.31
ICE 1	4.2	0.11	0.7	0.12	0.96	--	0.004
Tank 1	--	0.97	--	--	--	--	--
Tank 2	--	0.97	--	--	--	--	--
TOTAL	1,931.4	16.05	5,854.7	392.12	242.56	0.206	2.624

VI. Guam Requirements

The following table lists the applicable requirements from the Guam Air Pollution Control Standards and Regulations (GAPCSR) and from the Guam State Implementation Plan (SIP). Where an applicability determination was required, this is included below.

Section 1103.2	Guam Ambient Air Quality Standards
Section 1103.3	Visible Emissions
Section 1103.4	Fugitive Dust
Section 1103.10	Sulfur Oxides from Fuel Combustion
Section 1103.11	Open Burning
Section 1103.12	Control of Odors in Ambient Air
Section 1103.13	Asbestos
Section 1104	Permit Program Regulations
SIP, Section 7.5	Particulate Emissions from Fuel Combustion

VI.A. Particulate Matter (PM) Limits for Fuel Burning Equipment

Section 7.5 of the GEPA SIP requires that for fuel burning equipment between 1 and 1,000 MMBtu/hr, the allowable particulate emissions shall be limited to:

$$Y = 1.02 X^{-0.231}$$

Where:

Y = Allowable particulate emission rate (lb/MMBtu)

X = Operating rate (MMBtu/hr)

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Assuming an engine efficiency of 40%, and using a conversion factor of 3.41 MMBtu/hr per MW, this limit would be required for engines between 0.12 MW and 117 MW. Therefore, the two boilers (Units 1 and 2) and the emergency generator (Unit ICE 1) are subject to this limit. The allowable PM emission rates for each unit were calculated based on operating load and the equation and assumptions outlined above. The resulting PM emission limits for the facility are presented in the table below. GEPA believes that no additional monitoring is necessary to ensure compliance with these process weight rate limits.

Emission Unit	PM Limit (lb/MMBtu)
Unit 1	0.36
Unit 2	0.36
ICE 1	1.1

VII. Federal Requirements

The following table lists the applicable requirements from United States Environmental Protection Agency (USEPA) regulations. For rules where an applicability determination was required, a discussion is included below.

40 CFR 61, Subpart M	Asbestos
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VII.A. New Source Performance Standards (NSPS)

VII.A.1 Boilers

The applicability of the NSPS for Small Industrial-Commercial-Institutional Steam Generating Units (40 CFR 60, Subpart Dc) was reviewed, and it was determined that this regulation does not apply to the boilers (Units 1 and 2) at this facility. NSPS Subpart Dc applies to steam generating units with a maximum design heat input capacity between 2.9 MW and 29 MW for which construction, reconstruction, or modification commenced after June 9, 1989. The boilers at this facility meet the heat input requirement. However, the boilers are exempt from the NSPS because they were constructed in 1971.

VII.A.2 Tanks

The applicability of the NSPS for Volatile Organic Liquid Storage Vessels (40 CFR 60, Subpart Kb) was reviewed, and it was determined that this regulation does not apply to the tanks at this facility. NSPS Subpart Kb generally applies to liquid storage tanks with a capacity greater than or equal to 75 cubic meters (m³) (19,815 gallons) that store

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volatile organic liquids, and for which construction, reconstruction, or modification was started after July 23, 1984. Two tanks at this facility (Units Tank 1 and Tank 2) meet the size. However, the tanks are exempt from the NSPS because they were constructed in 1971. Furthermore, 40 CFR 110b(b) states that tanks are exempt from the NSPS if they satisfy either of the following criteria:

1. They have a capacity greater than or equal to 151 m³ and store a liquid with a maximum true vapor pressure less than 3.5 kilopascals (kPa); or
2. They have a capacity greater than or equal to 75 m³ but less than 151 m³ and store a liquid with a maximum true vapor pressure less than 15.0 kPa.

The facility stores No. 6 fuel oil and diesel fuel, which is listed in USEPA AP-42 Table 7.1-2 as having a true vapor pressure of 0.00002 pounds per square inch (psi) for No. 6 fuel oil at 40 degrees Fahrenheit (deg F) and 0.0031 pounds per square inch (psi) at 40 degrees Fahrenheit (deg F) for diesel fuel, 0.00019 pounds per square inch (psi) for No. 6 fuel oil at 100 degrees Fahrenheit (deg F) and 0.022 psi at 100 deg F for diesel fuel. Converting units, this translates to a true vapor pressure range from 0.000137 kPa to 0.00131 kPa for No. 6 fuel oil and 0.021 kPa to 0.15 kPa for diesel fuel. These values are well below the thresholds in the criteria listed above. As a result, NSPS Subpart Kb does not apply to the fuel oil storage tanks at this facility.

VII.B. Compliance Assurance Monitoring (CAM)

Compliance Assurance Monitoring (CAM) is intended to provide a reasonable assurance of compliance with applicable requirements for large emission units that rely on pollution control device equipment to achieve compliance. The CAM regulations can be found in 40 CFR 64. CAM applicability is determined on a pollutant-specific basis. According to these regulations, an emission unit that meets the following criteria is subject to CAM:

1. The unit is located at major source required to obtain Part 70 or 71 permit;
2. The unit is subject to an emission limitation for the applicable pollutant;
3. The unit uses a control device (as defined by 40 CFR 64.1) to achieve compliance;
4. The potential precontrolled emissions of an applicable pollutant from the unit are equal to or greater than the major source threshold for that pollutant; and
5. The unit is not otherwise exempted by the CAM regulations.

Regarding the first requirement, the CAM rule (in 40 CFR 64.1) states that “*Part 70 or 71 permit* shall have the same meaning as provided under [40 CFR 70 or 71] provided

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that it shall also refer to a permit issued, renewed, amended, revised, or modified under any federal permit program promulgated under Title V [of the Clean Air] Act].”

After receiving a special exemption from USEPA, GEPA has adopted an “alternate operating permit program” according to the requirements of 40 CFR 69.13. As a result, so it was not immediately clear whether this program satisfied the definition in the CAM rule. USEPA Region 9 was consulted on this matter, and made a determination that GEPA’s alternate operating permit program was promulgated under Title V of the Clean Air Act, so facilities located on Guam are potentially subject to CAM.

The boilers (Units 1 and 2) are the only sources of emissions at this facility that are potentially subject to CAM. Units 1 and 2 are not equipped with any control devices.

Conclusion: None of the emission units at the facility are subject to CAM.

VIII. Periodic Monitoring and Recordkeeping

Requirement	Requirement Condition #	Existing Monitoring/ Recordkeeping	Monitoring/ Recordkeeping Added to Permit	Monitoring/ Recordkeeping Condition #
Opacity limit for fuel burning equipment	II.B.1.a	Annual source testing		II.D.8.f
Opacity limit for Units 1 and 2	II.B.1.a	Annual source testing	Weekly opacity monitoring	II.D.9 and II.D.12
SO ₂ limit for Units 1 and 2	II.B.2.a	Annual source testing		II.D.9
PM ₁₀ limit for Units 1 and 2	II.B.2.a	Annual source testing		II.D.9
NO _x limit for Units 1 and 2	II.B.2.a	Annual source testing		II.D.9
CO limit for Units 1 and 2	II.B.2.a	Annual source testing		II.D.9
VOC limit for Units 1 and 2	II.B.2.a	Annual source testing		II.D.9
PM limit for Units 1 and 2	II.B.2.b	Annual source testing		II.D.9

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Requirement	Requirement Condition #	Existing Monitoring/ Recordkeeping	Monitoring/ Recordkeeping Added to Permit	Monitoring/ Recordkeeping Condition #
PM limit for ICE 1	II.B.3.a	Annual source testing		II.D.10
Preventative maintenance for Units 1 and 2 and Tanks 1 and 2	II.C.1	None	Maintenance recordkeeping	II.E.4.c
Minimize emissions by good operating practice	II.C.1	None		N/A
Inspections and maintenance of vents on storage tanks	II.C.2	None	Inspection and maintenance recordkeeping	II.E.4
Maintain adequate supply of fire fighting foam	II.C.3	None		N/A
Fuel sulfur content limit for Units 1 and 2	II.C.4	Monitoring of fuel sulfur content		II.D.6
Fuel sulfur content limit for Unit ICE 1	II.C.6	None	Monitoring of fuel sulfur content	II.D.6
Measures to prevent air standard exceedances	II.C.6	None		N/A
Fugitive dust restrictions	II.C.8 and II.C.7	None		N/A